

Natural Heritage & Endangered Species Program

Commonwealth of Massachusetts
Division of Fisheries & Wildlife
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THREATENED SPECIES OF MASSACHUSETTS

Gerhard's Underwing Moth (*Catocala herodias gerhardi*)

DESCRIPTION: Gerhard's Underwing Moth is a large, distinctive moth with a wingspan of 5.6 to 6.5 cm (2.25-2.6 in). Its forewings are gray with a fine wood-grain pattern of brown, black and white shading. It has blackish veining and distinct white margin stripes along the forewing costa. The hindwing is bright crimson-red with black bands and white fringe. The brilliant coloring of the hindwing serves to startle predators when the well-camouflaged moths are discovered at rest on tree trunks.

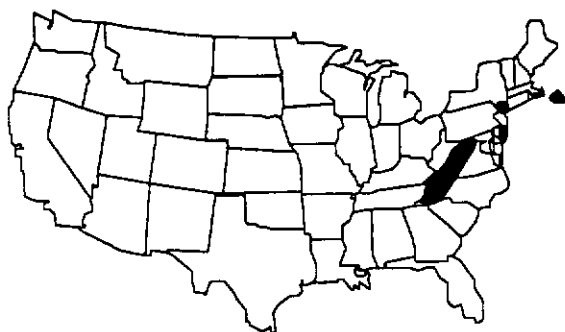


Covell, Charles V., Jr. *A Field Guide to the Moths of Eastern North America*. Boston: Houghton Mifflin, Co., 1984.

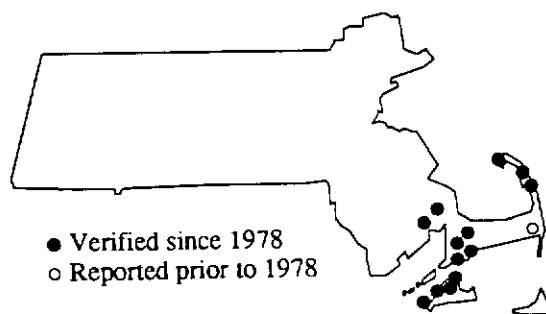
RANGE: The range of this subspecies is from southeastern Massachusetts (Cape Cod region and Martha's Vineyard), extreme southeastern New York (Long Island), southern New Jersey and in the Appalachians from northeastern West Virginia to extreme western North Carolina.

HABITAT IN MASSACHUSETTS: Gerhard's Underwing Moth occurs in scrub oak barrens, with an open pitch pine canopy. These pitch pine/scrub oak barrens are an open shrubland plant community, that occurs on outwash sandplains. Characteristic of these barrens is an open canopy of pitch pine, a nearly impenetrable understory of scrub oaks up to 2-3 m (7-10 ft), and shorter huckleberry about a meter (3 ft) tall.

Pitch pine/scrub oak barrens are not floristically very diverse; the combination of species plus the physical structure of the vegetation defines the natural community. The main tree species is pitch pine (*Pinus rigida*) with the shrubs scrub oak (*Quercus ilicifolia*) dominant near the coast and dwarf chinquapin oak (*Q. prinoides*) more common inland. Huckleberry (*Gaylussacia baccata*) is shorter than the oaks and often grows in dense clones. Lowbush blueberries (*Vaccinium angustifolium* and *V. pallidum*) may form large patches, or grow mixed with other



Documented Range of
Gerhard's Underwing Moth



Distribution in Massachusetts

species. In the openings between the shrubs, there are usually clones of bearberry (*Arctostaphylos uva-ursi*), large patches of fruticose (shrub-like) lichens and intermixed areas with sedges (primarily *Carex pensylvanica* and *C. rugosperma*) or little blue stem (*Schizachyrium scoparium*).

LIFECYCLE/BEHAVIOR: The larvae of Gerhard's Underwing hatch in mid-May and feed on the young emerging leaves and flowering parts of scrub oak (*Q. ilicifolia*). The larvae mature in approximately three weeks and, in June, pupate in a cocoon among leaf litter. Moths emerge in three weeks and, in July, lay eggs on scrub oak. The eggs overwinter on scrub oak. Adults are active mainly after 2 a.m.

POPULATION STATUS IN MASSACHUSETTS: Gerhard's Underwing Moth is listed as a "Threatened Species" in Massachusetts because of its loss of habitat and current rarity in the state. Historically or prior to 1978, there were 3 sightings or populations reported from 3 towns in Massachusetts. Since 1978, with increased efforts to locate and identify populations, there have been 18 verified populations from 13 towns reported to the Massachusetts Natural Heritage and Endangered Species Program. Threats to this species' pitch pine/scrub oak barrens habitat include development and alteration which changes and fragments its habitat, and fire suppression which allows succession to tree species, filling in the open areas this moth prefers.

MANAGEMENT RECOMMENDATIONS: Managed recurrent, patchy fires are needed to maintain scrub oak habitat, but *in situ* populations may not be able to survive fires. Burning should be staggered to allow current populations to recolonize. Gypsy moth spraying, or other widespread spraying with insecticides in spring will adversely affect or eradicate this species. No insecticides should be used during the active stage of its life cycle (between April 15 and August).

References Cited:

- Covell, Charles V, Jr. A Field Guide to the Moths of Eastern North America. Boston: Houghton Mifflin Company, 1984.
- Goldstein, P.Z. Update of rare insect occurrences in the Manuel F. Correllus State Forest and vicinity, Martha's Vineyard, Dukes County, MA. Report to Massachusetts Natural Heritage and Endangered Species Program, 1994.
- Sargent, Theodore D. Legion of Night - The Underwing Moths. Amherst, MA.: University of Massachusetts Press, 1976.
- Schweitzer, Dale. "Catocala herodias gerhardi," Element Abstract, Massachusetts Natural Heritage and Endangered Species Program, 1982.